LETTERS TO THE EDITOR

Regarding "Association of Program Directors in Vascular Surgery (APDVS) survey of program selection, knowledge acquisition, and education provided as viewed by vascular trainees from two different training paradigms"

The results of this exceedingly important survey[1] point to a vital area for improvement in our training programs for vascular residents. It is not surprising that our residents indicate the business side of training as one of the areas that needs improvement. Almost 69% and 70% of integrated and independent residents, respectively, opined that they needed more education in this area. In a survey, 133 practicing vascular surgeons in a regional vascular society were asked to score their knowledge of 11 business related topics.[2] The mean score of respondents was a dismal 7.7 out of a total of 20 maximum points achievable.

Since the survey, the Department of Surgery at Ohio State started a 24-month practice management once a month curriculum, which is mandatory for fourth and fifth year General Surgery Residents. The topics include healthcare economics, personal finance, purchasing insurance products, choosing financial advisers, healthcare law, marketing, physician-hospital relationships, evaluating employment agreements, and many other practical topics. Vascular Residents are also invited to attend but are rarely in attendance due to other commitments. This has proved to be a major plus for the program in truly getting General Surgery residents ready for the "real world" as well as a major asset in recruiting new applicants to the program.

The Association of program Directors in Vascular Surgery should create a basic framework for a practice management program and persuade Program Directors to incorporate this important aspect in the Vascular Residency training on equal footing with the scientific parts of instruction. No longer is this knowledge valuable for just those graduates entering private practice. Academic Vascular Surgeons will need this knowledge as well.

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http://dx.doi.org/10.1016/j.jvs.2012.03.012

Reply

A critical evaluation of surgical education and, in fact, all medical education is taking place on many fronts. Our survey was an attempt to determine the current strengths and challenges of our training programs from the perspective of the trainee. Certainly, the business aspect of vascular surgery is one area that appears to have taken a back seat to other educational efforts. In this letter to the editors, an article is mentioned which suggests that we, as surgeons, have not embraced the business side of surgery to the degree required in the current environment. Included within our manuscript are four articles that reflect the fact that essentially all those involved in surgical education—resident, educator, and practicing surgeon—believe that such training is very important to the ultimate success of a vascular surgeon. The Association of Program Directors in Vascular Surgery, as sponsor of the survey, is aware that we as instructors will need to address this area of perceived educational deficiency.

I applaud the authors for having instituted a practice management course within their Department of Surgery that includes many of the practical issues so important to understanding the business of surgery. I cannot comment on the local involvement of the vascular surgery residents. What would be most helpful to advance the concept of a dedicated business course within surgical training would be a detailed description of the program, a pre- and postcourse measurement of knowledge gained and possibly a method to determine how it has improved the postresidency competence of the involved residents. If your program has been in place for any length of time, such an evaluation of your course could provide critical insight into those areas most important to the residents and ultimately to the practicing surgeon. With all that must be covered in a vascular surgery training program and with the time constraints imposed, providing a course with proven and measurable standards is becoming ever so important.

The business aspect of surgery is important in the education of our residents and to their future success. It must be addressed within our training programs as must the cognitive, technical, professional, interpersonal communication, and systems-based understanding of a well trained vascular surgeon.

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http://dx.doi.org/10.1016/j.jvs.2012.03.011

Regarding "Results of endovascular aortic aneurysm repair with general, regional, and local/monitored anesthesia care in the American College of Surgeons National Surgical Quality Improvement Program database"

Edwards and colleagues are to be commended for their excellent analysis of anesthesia morbidity related to endovascular repair of abdominal aortic aneurysms (EVAR) based on data in the National Surgical Quality Improvement Program Database.[1] Since vascular surgeons may read this report and, in the future, suggest spinal anesthesia for their EVAR patients, we would like to comment on some of the issues elucidated by this report. As correctly stated in their conclusion,[1] the National Surgical Quality Improvement Database (NSQIP) database is not designed to analyze anesthetic data, and as such cannot bring to the discussion known variables, such as anesthesia duration, perioperative temperature, use of specific pharmacologic agents, fluid administration, obesity, etc. Therefore, trying to speculate as to why one anesthetic technique is associated with a certain outcome is going to be challenging. There is also a tendency to view general anesthesia as a fundamentally noxious technique compared with regional anesthesia in elderly patients, when in actuality, objective evidence for this position is lacking. Take, for example, Goldstein et al's recent study

in nonagenarians undergoing EVAR; 58% received general anesthesia without any anesthetic-related complications.[2]

We ponder Edwards et al's[1] explanation of why the epidural anesthesia group was associated with similar pulmonary morbidity and length of stay outcome to the general anesthesia group, when in actuality, being a neuraxial anesthetic technique, there should be no difference compared with spinal anesthesia. That the epidural anesthesia technique was associated with larger volumes of fluid administration, use of neuraxial opioids, and/or problems related to the epidural catheter, is somewhat speculative. In the absence of actual data, which the NSQIP database unfortunately does not provide, one should be cautious in making these claims. Furthermore, epidural anesthesia is typically associated with smaller hemodynamic changes compared with spinal anesthesia, so if vasodilation secondary to sympathetic blockade must be treated with intravenous fluid, the epidural group would probably need less fluid, not more.[3]

In addition, we note the rather stark differences in blood administration between the groups. Although autologous was not differentiated from allogeneic blood, we note that ~11% of patients in the general, epidural group and local/monitored anesthesia care received blood, as opposed to 5.7% in the spinal anesthesia group; we also note that the general anesthesia group received more blood per patient than other groups (ie, 2.4 ± 2.2 units vs ~1.7 units).[1] Edwards et al[1] opine that general anesthesia involves the use of volatile anesthetic agents, which are immunosuppressive and potentially increase the risk of postoperative pneumonia. What about the potential contribution of allogeneic blood? Allogeneic blood is immunosuppressive and is known to be associated with increased postoperative infection and increased length of stay, following a dose–response pattern.[4,5] However, for their multivariate analysis, they use the term "volume of necessary transfusion," which questions what their transfusion protocol was.

Although our clinical results have been satisfactory using an approach that employs general anesthesia, a planned extubation in the operating room, and judicious use of blood products and fluids, Edwards et al[1] have provided a useful template and database upon which to base further clinical research.

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http://dx.doi.org/10.1016/j.jvs.2012.02.070

Reply

We greatly appreciate the opportunity to respond to this informed and intriguing letter to the editor. We have carefully considered the authors' comments and greatly appreciate their time in formulating meaningful questions and requests for clarification. We certainly agree that the National Surgical Quality Improvement Program user database was not designed to test hypotheses of the sort that were proposed in our manuscript, and we made that point clear in the discussion as a major limitation of the study. We agree with the authors' assertions regarding general anesthesia as a safe anesthetic technique for the performance of endovascular aneurysm repair, and our group has enjoyed a similar experience at our institution with excellent results across all measured morbidity and mortality. However, the findings do speak for themselves and (exactly as the letter relates) provide motivation and ideas for further study to further refine our care processes around aneurysm management. Certainly a randomized trial could answer the question more fully, but such a trial is unlikely to be carried out. Registry and quality data such as the National Surgical Quality Improvement Program are likely to be utilized for such queries on an increasingly frequent basis in the future due to the lack of expense and convenience. Furthermore, they are likely more robust indicators of valid, "real-world" results than tightly regulated trials. We stand by the findings of our study and have certainly taken the results into consideration in making decisions for our patients since its completion.

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http://dx.doi.org/10.1016/j.jvs.2012.03.270

Regarding "New routine alternative for proximal anterior tibial artery bypass in patients with Buerger disease"

Lee et al[1] have described a new routing alternative to perform bypasses to the proximal femoral anterior tibial artery in selected patients. In addition to their recommendation for its use in Buerger's disease, this technique might also be advantageous for patients with infective processes in the popliteal fossa.

However, contrary to the authors' statement that this "technique has the advantage of providing a shorter route for the bypass graft," we would argue that the shortest route would still be directly from the medial aspect to the proximal third of the anterior tibial artery which can be dissected from this direction. We described this more than two-and-a-half decades ago in the *Journal of Vascular Surgery.*[2]

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